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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,460	08/29/2001	Tatsuhisa Chikada	P21398	5050

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EXAMINER
DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 08/18/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/940,460	CHIKADA, TATSUHISA	
	Examiner	Art Unit	
	Tracy Dove	1745	

-- The MAILING DATE of this communication appears on the cover sh t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-7* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 11/29/01 has been considered by the examiner.

Claim Objections

Claim 1 is objected to because of the following informalities: the claim recites improper Markush group language in lines 7-8. Examiner suggests the claim be amended to recite "either one of in series or in parallel". Appropriate correction is required.

Claim 2 is objected to because of the following informalities: Examiner suggests the claim be amended to recite "wherein the electrode terminals of the secondary batteries *are* connected" to clearly recite at least two terminals are connected. Appropriate correction is required.

Claim 4 is objected to because of the following informalities: the claim recites "is connected to the remaining secondary battery that is made in an appropriate direction". Examiner suggests the claim be amended to recite "is connected to the remaining secondary battery". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoi et al., WO 00/46865.

Aoi teaches a battery pack wherein two cells are connected in parallel and arranged at predetermined positions relative to each other such that the positive and negative terminals are juxtaposed with each other on an identical plane at one end of the cells. The cells are fixed/connected together a positive connecting terminal plate, a negative connecting terminal plate and an insulating tape (page 30, lines 11-19). The two cylindrical cells are disposed parallel to each other and are connected in parallel. The positive connecting terminal plate electrically connects the positive terminals of the two cylindrical cells and the negative connecting terminal plate electrically connects the negative terminals of the two cylindrical cells. The insulating tape is a both-sided adhesive tape in which an adhesive has been applied on both sides of a tape member made of an electrically non-conductive and non-ion-transmissive resin such as PET or PE (page 30, line 20-page 31, line 13). The insulating tape is affixed to the upper surface of the connecting terminal plate (page 32, lines 15-22). Note Figure 9. The batteries are held within a frame body or inserted into and held within a cell casing (abstract). A small amount of adhesive 50 is dropped onto the opposed portion of the outer peripheries of the cells so that the cells are fixed at predetermined relative positions (page 21,lines 26-page 22, line 2). Furthermore, an outer label made of a resin film is heated at a low temperature so that an adhesive that has been applied to one surface of the label in advance exhibits adhesion. The

outer label (adhesive tape) is wrapped around the outer peripheries of both cells (page 23, lines 11-18).

Thus the claims are anticipated.

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Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Mabuchi et al., US 3,923,549.

Mabuchi teaches a battery pack comprising a plurality of secondary cells connected in series (col. 1, lines 20-46). Conductive connecting caps are provided for connecting the individual cells to one another and insulating washers are associated therewith (col. 2, lines 9-12). To a positive terminal of a cell is welded a conductive connecting cap at the central projecting portion thereof. An insulating washer is disposed around the positive terminal area (col. 2, lines 33-43). The insulating washer prevents the casing of one cell from accidentally contacting the casing of the adjacent cell, thus causing an inadvertent short-circuiting of the battery (col. 2, lines 53-56). The figures show the cells are contained in a housing 11 and disposed in parallel with a predetermined spacing.

Thus the claims are anticipated.

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Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Thiele et al., US 4,593,461.

Thiele teaches a battery pack including a plurality of cells arranged in parallel (see figures) having a connector means for electrically connecting each of the cells in series (col. 3, lines 9-12). The connector means includes conductive strips 26. Nonconductive washer

members 38 insulate each cell in the stack from the aligned other cell in the stack (col. 3, lines 15-58). The cells are contained in a housing structure. See the Figures.

Thus the claims are anticipated.

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Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Verdier et al., US 4,576,880.

Verdier teaches a battery pack having a plurality of rechargeable battery cells connected in series and arranged in the form of two parallel rows. Insulating washers 30 in the form of rings are disposed on the various cells 10 around the studs 12 (terminals). The cells are connected in series by means of electrically conductive elements 20 so as to connect the positive pole 12 of cell 10 to the negative pole of an adjacent cell. The connecting elements are generally rectangular and provide a slight spacing between the two rows of cells (col. 6, lines 61-col. 7, lines 27).

Thus the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoi et al., WO 00/46865 in view of Cheeseman, US 6,376,122.

Aoi teaches a battery pack wherein two cells are connected in parallel and arranged at predetermined positions relative to each other such that the positive and negative terminals are juxtaposed with each other on an identical plane at one end of the cells. The cells are fixed/connected together a positive connecting terminal plate, a negative connecting terminal plate and an insulating tape (page 30, lines 11-19). The two cylindrical cells are disposed parallel to each other and are connected in parallel. The positive connecting terminal plate electrically connects the positive terminals of the two cylindrical cells and the negative connecting terminal plate electrically connects the negative terminals of the two cylindrical cells. The insulating tape is a both-sided adhesive tape in which an adhesive has been applied on both sides of a tape member made of an electrically non-conductive and non-ion-transmissive resin such as PET or PE (page 30, line 20-page 31, line 13). The insulating tape is affixed to the upper surface of the connecting terminal plate (page 32, lines 15-22). Note Figure 9. The batteries are held within a frame body or inserted into and held within a cell casing (abstract). A small amount of adhesive 50 is dropped onto the opposed portion of the outer peripheries of the cells so that the cells are fixed at predetermined relative positions (page 21,lines 26-page 22, line 2). Furthermore, an outer label made of a resin film is heated at a low temperature so that an adhesive that has been applied to one surface of the label in advance exhibits adhesion. The outer label (adhesive tape) is wrapped around the outer peripheries of both cells (page 23, lines 11-18).

Aoi does not explicitly teach the cells are of a flat rectangular shape.

However, Cheeseman teaches a battery pack wherein a variety of shapes of batteries can be employed. While Cheeseman shows cylindrical cells in the figures, rectangular cells

(generally referred to as prismatic cells) can also be used. If prismatic cells are used, the battery pack of Cheeseman would be configured to provide a cell housing conforming to the shape and size of an assembly of such battery cells.

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one of skill would have found it obvious to use rectangular cells for the battery pack of Aoi. Cheeseman teaches that a variety of shapes of cells can be used for battery packs and that one of skill in the art would have known that with slight modifications to the size and shape of the assembly, rectangular cells can be substituted for cylindrical cells in the battery pack of Aoi. Thus, one of skill in the art would have found it obvious to substitute rectangular cells for the cylindrical cells of Aoi. One of skill in the art would have been motivated to combine Aoi and Cheeseman because both references are directed towards battery packs housing secondary batteries.

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claim is directed toward a battery pack having a plurality of secondary batteries disposed in parallel and electrically connected in series or in parallel. The battery pack includes an electrical insulating plate for connecting surfaces of the batteries where the electrode terminals are located. The number of batteries is an odd number (n+1) and the electrical insulating plate is on an end part of an assembly of an even number (n) of batteries connected to the remaining battery.

The prior art does not teach the battery pack construction of claim 4. Specifically, there is no motivation in Aoi et al. WO 00/46865 to modify the plurality of cells of the battery pack to reach the battery pack structure of claim 4. Adding a single cell to the end part of the plurality of batteries of Aoi and connecting the single cell to the rest of the batteries with an insulator would destroy the teachings of Aoi.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).

8/11/03

Tracy Dove
Patent Examiner
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